

WE CLAIM:

1. An enhanced method of providing telephone directory assistance service at a directory assistance center, comprising the steps:
  - 5 (a) receiving a customer call from a calling customer;
  - (b) connecting the calling customer to a directory assistance operator;
  - (c) locating a destination telephone number of 10 a desired party wanted by the calling customer in a computer database;
  - (d) initiating a telephone call between the calling customer and the destination telephone number responsive to operator selection of the destination 15 telephone number and one of a plurality of connection options, at least one of the connection options including the following steps:
    - (e) monitoring said telephone call for a predetermined call status signal of a predetermined call 20 status duration and,
    - (f) after said predetermined call status duration of predetermined call status signal has been detected, playing a recorded menu of options for the calling customer, the recorded menu allowing the calling 25 customer to select from a plurality of options with a predetermined caller input signal;
    - (g) monitoring said telephone call for said predetermined caller input signal issued by the calling customer responsive to said recorded menu; and
    - 30 (h) taking action based on said predetermined caller input signal issued by the calling customer.
2. The method of claim 1, where the predetermined signal is a ringing signal, the method 35 further comprising:
  - detecting the existence of said ringing signal;
  - muting the ringing signal for the calling customer while continuing to ring the destination telephone number; and

repeating steps (f) - (h).

3. The method of claim 2 which includes  
returning audible ringing to the calling customer and  
5 repeating steps (e) - (h).

4. The method of claim 1, where the  
predetermined signal is a busy signal, the method  
further comprising:

10 detecting the existence of said busy signal; and  
dropping said telephone call to said destination  
telephone number.

15 5. The method of claim 1 where the plurality  
of options comprises: leaving a recorded voice message  
for a desired party, leaving a pre-determined  
alphanumeric message for the desired party, leaving a  
dictated message for the desired party, playing an audio  
"voicing" of the number of the desired party, calling  
20 the desired party back every N-minutes, where N-minutes  
is chosen by the calling customer, leaving a recorded  
voice page for the desired party, leaving a pre-  
determined alphanumeric page for the desired party,  
hanging up, or being returned to a directory assistance  
operator.

30 6. The method of claim 1 further comprising:  
determining whether the calling customer wishes  
to record a voice message for a non-answering party  
which will be delivered at a later time, and if so,  
terminating said telephone call to the  
destination telephone number, and  
allowing the calling customer to record the  
35 voice message to be delivered to the non-answering party  
at a later time.

7. The method of claim 6 which further includes allowing the calling customer to determine how many attempts will be made to deliver the recorded voice message.

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8. The method of claim 6 which further includes calling the calling customer back at a later time to confirm successful or failed recorded voice message delivery.

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9. The method of claim 6 where the recorded voice message is a recorded voice page.

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10. The method of claim 1 further comprising: determining whether the calling customer wishes to leave an alphanumeric message for a non-answering party which will be delivered at a later time, and if so,

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terminating said telephone call to the destination telephone number, and

allowing the calling party to leave an alphanumeric message to be delivered to the non-answering party at a later time.

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11. The method of claim 10 in which the alphanumeric message is created by the directory assistance center from voice dictation by the calling customer.

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12. The method of claim 10 in which the alphanumeric message is selected from a predetermined set of alphanumeric messages.

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13. The method of claim 10 in which the alphanumeric message is an alphanumeric page.

14. The method of claim 10 which further includes calling the calling party back at a later time to confirm successful or failed alphanumeric message delivery.

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15. The method of claim 10 which further includes allowing the calling customer to determine how many attempts will be made to deliver the alphanumeric message.

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16. The method of claim 1 further comprising:  
determining whether said predetermined caller  
input signal is a return-to-operator signal, and if so,  
having a PBX reassign an operator to the calling

15 customer,  
                  playing a return greeting for the calling  
customer, and

re-connecting the calling customer to a directory assistance operator.

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17. The method of claim 16 wherein the return-to-operator signal is a DTMF tone for the star key on a telephonic keypad.

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18. The method of claim 1 in which the predetermined caller input signal is a voice response from the calling customer.

19. The method of claim 1 in which the predetermined caller input signal is a DTMF tone response.

20. The method of claim 1 which includes continuously monitoring said telephone call using a dedicated monitoring device.

21. A method of providing telephone directory assistance service at a directory assistance center, the directory assistance center in communications with a calling customer, and a telephonic service provider providing telephonic services to the calling customer, the steps comprising:

5 providing a plurality of directory assistance services to the calling customer, the directory assistance services including providing a number of a desired party, leaving a message for the desired party, 10 paging the desired party, and connecting the calling customer to the desired party; and

15 providing billing information to the telephonic service provider providing telephonic services to the calling customer for all directory assistance services provided by the directory assistance center to the calling customer.

22. The method of claim 21 which includes 20 leaving a recorded voice message for the desired party.

23. The method of claim 21 which includes leaving a dictated alphanumeric message for the desired party, where the alphanumeric message is dictated to a 25 directory assistance operator at the directory assistance center.

24. The method of claim 21 which includes 30 billing the service provider of the calling customer for message delivery, services, page delivery services, connection time to the directory assistance service, and connection time to the desired party.

25. A method of providing telephone directory assistance service at a directory assistance center, the telephone directory assistance service including 35 delivering a message to a called party comprising the steps:

completing a telephonic connection to a destination telephone number of the called party to deliver said message;

5 detecting a duration of voice response energy at the destination telephone number;

classifying an answer to the telephonic connection at the destination telephone number out of a plurality of types of answer; and

10 taking a different delivery action according to the type of answer.

26. The method of claim 25 wherein the step of taking a delivery action comprises for at least one of the types of answer:

15 playing a predetermined menu containing a plurality of options selectable by a party at the destination telephone number for accepting delivery of said message.

20 27. The method of claim 25 wherein the types of answer comprise an answer by a residential party, an answer by a business party, and an answer by an automated answering equipment.

25 28. The method of claim 25 wherein the types of answer comprise an answer by a residential party, the method comprising:

30 where the type of answer is the answer by a residential party, playing a menu with a set of options including at least transferring to an extension of the called party, and holding until the called party arrives.

35 29. The method of claim 25 wherein the types of answer comprise an answer by a business party, the method comprising:

where the type of answer is the answer by a business party, playing a menu with a set of options including at least transferring to an extension of the called party, and playing said message.

30. The method of claim 25 wherein the types of answer comprise an answer by automated answering equipment, the method comprising:

5 where the type of answer is the answer by an automated answering equipment, playing said message on said telephonic connection.

10 31. A method of directory assistance that includes providing a plurality of services to a calling customer, the services including connecting a calling customer to a directory assistance operator, the steps comprising:

15 providing a first queue to sequence calling customers to available operator;

15 providing a second queue, different from the first queue, to sequence calling customers who have been returned to an operator by a directory assistance service using a predetermined DTMF tone;

20 servicing the second queue until the second queue reaches a predetermined level; and

servicing the first queue until the first queue until the first queue is empty.

25 32. The method of claim 31 in which the predetermined level for servicing the first queue is an empty level in the second queue.

30 33. A method of directory assistance that includes providing a plurality of services to a calling customer, the steps comprising:

35 providing a directory assistance service to a calling party that provides the numbers of telephonic devices which are not telephonic devices connected to a dedicated land telephone line;

locating a number of a desired telephonic device that is not connected to a dedicated land telephone line using said distinct directory assistance service; and

connecting said calling party to said desired telephonic device using said number.

34. The method of claim 33 in which the  
5 telephonic device not connected to a dedicated telephone line include mobile phones, pagers, and personal communication services devices.

35. A method of directory assistance that  
10 includes connecting a calling customer to a desired number wherein the calling customer is being provided telephonic services by a telephonic service provider and the desired number is assigned to a telephonic device not connected to a dedicated land telephone line, the  
15 steps comprising:

asking if said calling customer will accept all charges for connection to said desired number, and if so connecting the calling customer to the desired number which is assigned to a telephonic device not connected to a dedicated telephone line, and

20 providing billing information to the telephonic service provider providing telephonic service to the calling customer for all charges for said connection.

25 36. The method of claim 35 in which the telephonic device not connected to a dedicated telephone line includes mobile phones, pagers, and personal communication services devices.

30 37. A method of directory assistance providing directory assistance service at a directory assistance center, where the directory assistance center is in communications with a calling customer, and the calling customer is identified at the directory assistance center by a calling customer telephone number, the  
35 method comprising:

locating a destination telephone number for the calling customer;

initiating a telephonic connection between the calling customer and the destination telephone number;

monitoring the telephonic connection for a termination signal from the calling customer; and

5 upon detection of the termination signal,

sending an alphanumeric page from the directory assistance center to the calling customer telephone number, said page including the destination telephone number and name of a party associated with the 10 destination telephone number.

38. The method of claim 37 where the alphanumeric page is sent with a predetermined paging protocol.

15 39. The method of claim 38 where the predetermined paging protocol is Telocator Alphanumeric Paging Protocol (TAP).

20 40. The method of claim 38 where the predetermined paging protocol is Telocator Data Protocol (TDP).

25 41. A method of directory assistance where a calling customer has been connected to a called party over a connection initiated by a directory assistance center, the calling customer connected to the called party with a telephonic device capable of receiving and storing pages the method comprising:

30 upon termination of the connection by the calling customer,

receiving an alphanumeric page from the directory assistance center, said alphanumeric page including the destination telephone number and name of a 35 party associated with the destination telephone number, and

storing said alphanumeric page in the calling customer telephonic device.

42. The method of claim 41 further comprising:  
retrieving the alphanumeric page stored in the  
calling customer telephonic device; and  
calling the called party using the information  
5 contained within the retrieved page.

43. The method of claim 41 where the  
alphanumeric page is sent with a predetermined paging  
protocol.

10 44. The method of claim 43 where the  
predetermined paging protocol is Telocator Alphanumeric  
Paging Protocol (TAP).

15 45. The method of claim 43 where the  
predetermined paging protocol is Telocator Data Protocol  
(TDP).

20 46. The method of claim 41 where the calling  
customer telephonic device is a mobile telephone.

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25 47. The method of claim 41 where the calling  
customer telephonic device is a personal communications  
service device.

30 48. A method of directory assistance providing  
a directory assistance service at a directory assistance  
center, where the directory assistance service is a call  
back service chosen by a caller in which the directory  
assistance center attempts to contact a called party,  
who is unavailable to the caller, the method comprising:  
35 attempting to contact the called party who is  
unavailable to the caller on a first telephonic  
connection at a predetermined interval;  
upon successfully contacting the called party,  
connecting to the caller on a second telephonic  
connection;  
determining whether caller desires to speak with  
the called party, and if so

connecting the caller on the second telephonic connection to the called party on the first telephonic connection to complete the call between the caller and the called party.

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*Rule 1124*

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*48.* The method of claim 47, the method further comprising, allowing the caller to determine the predetermined interval at which the directory assistance center will attempt to contact the called party who is unavailable.

*49.*

*50.*

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*49.* The method of claim 47, where the caller can select the failed number of attempts and the predetermined interval in which the directory assistance center will try to reconnect to the called party who is unavailable, the method further comprising,

attempting to contact the called party who is unavailable at the predetermined interval;

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determining whether the called party is unavailable, and if so recording a failed attempt; and upon exceeding the number of failed attempts selected by the caller,

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terminating the attempts to contact the called party who is unavailable at the predetermined interval, and

informing the caller that the directory assistance center did not successfully contact the called party before exceeding the selected number of failed attempts.

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*Rule 1124*

*51.*

50. A method of providing personalized

telephone directory assistance service at a directory assistance center, comprising:

maintaining a database of telephone numbers in

association with attribute values, the attribute values relating to attributes of telephone subscribers having the telephone numbers;

receiving a customer call from a calling customer;

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identifying an originating telephone number of  
the customer call;  
retrieving an attribute value associated with  
the originating telephone number from the database; and  
allocating the customer call to a directory  
assistance operator based on the attribute value  
associated with the originating telephone number.

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*Rule 1.124* 52  
10 attribute value identifies a language spoken by the  
telephone subscriber, the method further comprising:  
assigning the customer call to a directory  
assistance operator who is a speaker of the language.

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*Rule 1.124* 53  
15 The method of claim 50 wherein the  
attribute value identifies the telephone subscriber as a  
preferred customer, the method further comprising:  
prioritizing the customer call in relation to  
other calls to the directory assistance center.

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*Rule 1.124* 54  
20 A method of providing personalized  
telephone directory assistance service at a directory  
assistance center, comprising:  
maintaining a database of telephone numbers in  
association with attribute values, the attribute values  
relating to attributes of telephone subscribers having  
the telephone numbers;

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receiving a customer call from a calling  
customer;  
identifying an originating telephone number of  
the customer call;

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retrieving an attribute value associated with  
the originating telephone number from the database; and  
playing personalized automated audio according  
to the attribute value, the personalized automated audio  
being specific to the telephone subscriber whereby  
different personalized automated audio is played to at  
least some of the calls received at the directory  
assistance center.

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54. The method of claim 53 wherein the personalized automated audio comprises greetings, and closings.

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5 55. The method of claim 53 wherein the personalized automated audio comprises a menu having a set of options based on the attribute value, whereby a different menu is played to at least some of the calls received at the directory assistance center.

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15 56. The method of claim 55 wherein the menu comprises a set of options for actions in response to a failure to connect with a desired party, the method further comprising:

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locating a destination telephone number of the desired party wanted by the calling customer in a computer database;

initiating an attempt to telephonically connect the calling customer to the destination telephone number;

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monitoring the attempt to detect a predetermined status signal indicative of failure to telephonically connect the calling customer to the destination telephone number;

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if the predetermined status signal is detected, playing the menu to the calling customer;

monitoring the customer call for input from the calling customer responsive to the menu and indicative of one of the options; and

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taking the action for the option indicated by the input.



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